

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-24. (Canceled)

25. (Previously Presented) A method of manufacturing a semiconductor device, comprising:

heating a substrate with a plurality of light pulses,

wherein each light pulse has a cycle of one second or longer, and

wherein said each light pulse is formed by switching on and off a lamp light source.

26. (Previously Presented) A method according to claim 25, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

27. (Currently Amended) A method of manufacturing a semiconductor device, comprising ~~the steps of~~:

supplying heated gas into a reaction tube; and

heating a substrate with a plurality of light pulses,

wherein each light pulse has a cycle of one second or longer, and

wherein said each light pulse is formed by switching on and off a lamp light source.

28. (Previously Presented) A method according to claim 27, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

29. (Previously Presented) A method of manufacturing a semiconductor device comprising:

- disposing a substrate in a reaction tube;
- heating the substrate in a first stage with a plurality of first light pulses, and
- heating the substrate in a second stage with a plurality of second light pulses, wherein each first light pulse has a cycle of one second or shorter, wherein each second light pulse has a cycle of one second or longer, wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and wherein the lamp light source is provided outside of the reaction tube.

30. (Previously Presented) A method according to claim 29, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

31. (Previously Presented) A method of manufacturing a semiconductor device comprising:

- disposing a substrate in a reaction tube;
- supplying heated gas to the reaction tube;
- heating the substrate in a first stage with a plurality of first light pulses, and
- heating the substrate in a second stage with a plurality of second light pulses, wherein each first light pulse has a cycle of one second or shorter,

wherein each second light pulse has a cycle of one second or longer,
wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and
wherein the lamp light source is provided outside of the reaction tube.

32. (Previously Presented) A method according to claim 31, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

33. (Previously Presented) A method of manufacturing a semiconductor device, comprising:
disposing a substrate in a reaction tube; and
heating the substrate with a plurality of light pulses,
wherein each light pulse has a cycle of one second or shorter, and
wherein said each light pulse is formed by switching on and off a lamp light source.

34. (Previously Presented) A method according to claim 33, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

35.-36. (Canceled)

37. (Previously Presented) A method of manufacturing a semiconductor device comprising:
disposing a substrate in a reaction tube;

keeping the reaction tube under reduced pressure;
heating the substrate in a first stage with a plurality of first light pulses; and
heating the substrate in a second stage with a plurality of second light pulses,
wherein each first light pulse has a cycle of one second or shorter,
wherein each second light pulse has a cycle of one second or longer,
wherein said each first light pulse and said each second light pulse are formed by
switching on and off a lamp light source, and
wherein the lamp light source is provided outside of the reaction tube.

38. (Previously Presented) A method according to claim 37, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

39. (Previously Presented) A method of manufacturing a semiconductor device comprising:

disposing a substrate in a reaction tube;
supplying heated gas in the reaction tube while keeping the reaction tube under a reduced pressure;
heating the substrate in a first stage with a plurality of first light pulses; and
heating the substrate in a second stage with a plurality of second light pulses,
wherein each first light pulse has a cycle of one second or shorter,
wherein each second light pulse has a cycle of one second or longer,
wherein said each first light pulse and said each second light pulse are formed by
switching on and off a lamp light source, and
wherein the lamp light source is provided outside of the reaction tube.

40. (Previously Presented) A method according to claim 39, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

41. (Previously Presented) A method of manufacturing a semiconductor device, comprising:

disposing a semiconductor film, in which an impurity region of one conductive type is formed, in a reaction tube;

supplying heated gas into the reaction tube; and

heating the semiconductor film with a plurality of light pulses,

wherein each light pulse has a cycle of one second or longer, and

wherein said each light pulse is formed by switching on and off a lamp light source.

42. (Previously Presented) A method according to claim 41, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

43. (Previously Presented) A method of manufacturing a semiconductor device, comprising:

disposing a semiconductor film in a reaction tube;

supplying heated gas into the reaction tube; and

heating the semiconductor film with a plurality of light pulses,

wherein each light pulse has a cycle of one second or longer, and

wherein said each light pulse is formed by switching on and off a lamp light source.

44. (Previously Presented) A method according to claim 43, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

45. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

disposing a semiconductor film, in which an impurity region of one ~~conductivity~~ conductive type is formed, in a reaction tube;

heating the semiconductor film in a first stage with a plurality of first light pulses;
and

heating the semiconductor film in a second stage with a plurality of second light pulses,

wherein each first light pulse has a cycle of one second or shorter,

wherein each second light pulse has a cycle of one second or longer,

wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and

wherein the lamp light source is provided outside of the reaction tube.

46. (Previously Presented) A method according to claim 45, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

47. (Previously Presented) A method for manufacturing a semiconductor device, comprising:

disposing a semiconductor film, in which an impurity region of one conductive type is formed, in a reaction tube;
supplying heated gas into the reaction tube;
heating the semiconductor film in a first stage with a plurality of first light pulses;
and
heating the semiconductor film in a second stage with a plurality of second light pulses,
wherein each first light pulse has a cycle of one second or shorter,
wherein each second light pulse has a cycle of one second or longer,
wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and
wherein the lamp light source is provided outside of the reaction tube.

48. (Previously Presented) A method according to claim 47, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

49.-52. (Canceled)

53. (Previously Presented) A method of manufacturing a semiconductor device, comprising:

disposing a semiconductor film, in which an impurity region of one conductive type is formed, in a reaction tube;
keeping the reaction tube under a reduced pressure;
heating the semiconductor film in a first stage with a plurality of first light pulses;
and

heating the semiconductor film in a second stage with a plurality of second light pulses,

wherein each first light pulse has a cycle of one second or shorter,

wherein each second light pulse has a cycle of one second or longer,

wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and

wherein the lamp light source is provided outside of the reaction tube.

54. (Previously Presented) A method according to claim 53, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

55. (Previously Presented) A method of manufacturing a semiconductor device, comprising:

disposing a semiconductor film, in which an impurity region of one conductive type is formed, in a reaction tube;

keeping the reaction tube under a reduced pressure;

supplying heated gas into the reaction tube; and

heating the semiconductor film in a first stage with a plurality of first light pulses;

and

heating the semiconductor film in a second stage with a plurality of second light pulses,

wherein each first light pulse has a cycle of one second or shorter,

wherein each second light pulse has a cycle of one second or longer,

wherein said each first light pulse and said each second light pulse are formed by switching on and off a lamp light source, and

wherein the lamp light source is provided outside of the reaction tube.

56. (Previously Presented) A method according to claim 55, wherein the lamp light source is at least one selected from the group consisting of a halogen lamp, a metal halide lamp, a high-pressure mercury lamp, a high-pressure sodium lamp, and a xenon lamp.

57. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a video camera.

58. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a digital camera.

59. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a goggle type display.

60. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a car navigation system.

61. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a sound reproduction device.

62. (Original) A method according to claim 25 wherein the semiconductor device is a personal computer.

63. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a game apparatus.

64. (Withdrawn) A method according to claim 25 wherein the semiconductor device is a portable information terminal.

65. (Withdrawn) A method according to claim 25 wherein the semiconductor device is an image playback device.

66. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a video camera.

67. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a digital camera.

68. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a goggle type display.

69. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a car navigation system.

70. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a sound reproduction device.

71. (Original) A method according to claim 27 wherein the semiconductor device is a personal computer.

72. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a game apparatus.

73. (Withdrawn) A method according to claim 27 wherein the semiconductor device is a portable information terminal.

74. (Withdrawn) A method according to claim 27 wherein the semiconductor device is an image playback device.

75. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a video camera.

76. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a digital camera.

77. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a goggle type display.

78. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a car navigation system.

79. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a sound reproduction device.

80. (Original) A method according to claim 29 wherein the semiconductor device is a personal computer.

81. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a game apparatus.

82. (Withdrawn) A method according to claim 29 wherein the semiconductor device is a portable information terminal.

83. (Withdrawn) A method according to claim 29 wherein the semiconductor device is an image playback device.

84. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a video camera.

85. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a digital camera.

86. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a goggle type display.

87. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a car navigation system.

88. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a sound reproduction device.

89. (Original) A method according to claim 31 wherein the semiconductor device is a personal computer.

90. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a game apparatus.

91. (Withdrawn) A method according to claim 31 wherein the semiconductor device is a portable information terminal.

92. (Withdrawn) A method according to claim 31 wherein the semiconductor device is an image playback device.

93. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a video camera.

94. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a digital camera.

95. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a goggle type display.

96. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a car navigation system.

97. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a sound reproduction device.

98. (Original) A method according to claim 33 wherein the semiconductor device is a personal computer.

99. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a game apparatus.

100. (Withdrawn) A method according to claim 33 wherein the semiconductor device is a portable information terminal.

101. (Withdrawn) A method according to claim 33 wherein the semiconductor device is an image playback device.

102.-110. (Canceled)

111. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a video camera.

112. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a digital camera.

113. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a goggle type display.

114. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a car navigation system.

115. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a sound reproduction device.

116. (Original) A method according to claim 37 wherein the semiconductor device is a personal computer.

117. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a game apparatus.

118. (Withdrawn) A method according to claim 37 wherein the semiconductor device is a portable information terminal.

119. (Withdrawn) A method according to claim 37 wherein the semiconductor device is an image playback device.

120. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a video camera.

121. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a digital camera.

122. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a goggle type display.

123. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a car navigation system.

124. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a sound reproduction device.

125. (Original) A method according to claim 39 wherein the semiconductor device is a personal computer.

126. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a game apparatus.

127. (Withdrawn) A method according to claim 39 wherein the semiconductor device is a portable information terminal.

128. (Withdrawn) A method according to claim 39 wherein the semiconductor device is an image playback device.

129. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a video camera.

130. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a digital camera.

131. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a goggle type display.

132. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a car navigation system.

133. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a sound reproduction device.

134. (Original) A method according to claim 41 wherein the semiconductor device is a personal computer.

135. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a game apparatus.

136. (Withdrawn) A method according to claim 41 wherein the semiconductor device is a portable information terminal.

137. (Withdrawn) A method according to claim 41 wherein the semiconductor device is an image playback device.

138. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a video camera.

139. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a digital camera.

140. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a goggle type display.

141. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a car navigation system.

142. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a sound reproduction device.

143. (Original) A method according to claim 43 wherein the semiconductor device is a personal computer.

144. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a game apparatus.

145. (Withdrawn) A method according to claim 43 wherein the semiconductor device is a portable information terminal.

146. (Withdrawn) A method according to claim 43 wherein the semiconductor device is an image playback device.

147. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a video camera.

148. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a digital camera.

149. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a goggle type display.

150. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a car navigation system.

151. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a sound reproduction device.

152. (Original) A method according to claim 45 wherein the semiconductor device is a personal computer.

153. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a game apparatus.

154. (Withdrawn) A method according to claim 45 wherein the semiconductor device is a portable information terminal.

155. (Withdrawn) A method according to claim 45 wherein the semiconductor device is an image playback device.

156. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a video camera.

157. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a digital camera.

158. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a goggle type display.

159. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a car navigation system.

160. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a sound reproduction device.

161. (Original) A method according to claim 47 wherein the semiconductor device is a personal computer.

162. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a game apparatus.

163. (Withdrawn) A method according to claim 47 wherein the semiconductor device is a portable information terminal.

164. (Withdrawn) A method according to claim 47 wherein the semiconductor device is an image playback device.

165-182. (Canceled)

183. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a video camera.

184. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a digital camera.

185. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a goggle type display.

186. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a car navigation system.

187. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a sound reproduction device.

188. (Original) A method according to claim 53 wherein the semiconductor device is a personal computer.

189. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a game apparatus.

190. (Withdrawn) A method according to claim 53 wherein the semiconductor device is a portable information terminal.

191. (Withdrawn) A method according to claim 53 wherein the semiconductor device is an image playback device.

192. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a video camera.

193. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a digital camera.

194. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a goggle type display.

195. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a car navigation system.

196. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a sound reproduction device.

197. (Original) A method according to claim 55 wherein the semiconductor device is a personal computer.

198. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a game apparatus.

199. (Withdrawn) A method according to claim 55 wherein the semiconductor device is a portable information terminal.

200. (Withdrawn) A method according to claim 55 wherein the semiconductor device is an image playback device.

201. (Previously Presented) A method for manufacturing a semiconductor device according to claim 27 further comprising:

supplying gas cooled to a temperature equal to or lower than a room temperature into the reaction tube to cool the substrate.

202. (Canceled)

203. (Previously Presented) A method for manufacturing a semiconductor device according to claim 43 further comprising:

supplying gas cooled to a temperature equal to or lower than a room temperature into the reaction tube to cool the substrate.

204. (Canceled)

205. (Previously Presented) A method for manufacturing a semiconductor device according to claim 33, wherein the reaction tube is kept under reduced pressure.

206.-208. (Canceled)

209. (Previously Presented) A method for manufacturing a semiconductor device according to claim 25, wherein the substrate is a glass substrate.

210. (Previously Presented) A method for manufacturing a semiconductor device according to claim 27, wherein the substrate is a glass substrate.

211. (Previously Presented) A method for manufacturing a semiconductor device according to claim 33, wherein the substrate is a glass substrate.

212. (Canceled)